

4. On a Collection of Shells (chiefly Land and Freshwater)
from the Solomon Islands. By EDGAR A. SMITH.

[Received May 26, 1885.]

(Plates XXXVI. & XXXVII.)

The specimens forming this collection were obtained by Mr. H. B. Guppy, Surgeon on board H.M.S. 'Lark,' which visited the Solomon Islands in 1882 for hydrographical purposes. Special value attaches to the collection, as in every instance the particular island where each individual specimen was collected has been noted by Mr. Guppy, to whom much praise is due for his great care in this respect, and also for the admirable manner in which the shells themselves have been preserved. A large number of Helicidæ have already been recorded from these islands, but in many instances the precise island has not been mentioned. It is important to know this, for as far as our present knowledge extends some species appear to be restricted to special islands, whilst others are known to exist on several. The series of *Melania* and *Neritina* are particularly interesting, as the freshwater forms from these islands have been comparatively overlooked. The genera *Ampullaria*, *Paludina*, *Linnæa*, *Physa*, *Planorbis*, and *Ancylus* are as yet unrecorded from this group, and the only member of the family Unionidæ which is known to exist there is that (*Unio guppyi*) described further on in this paper.

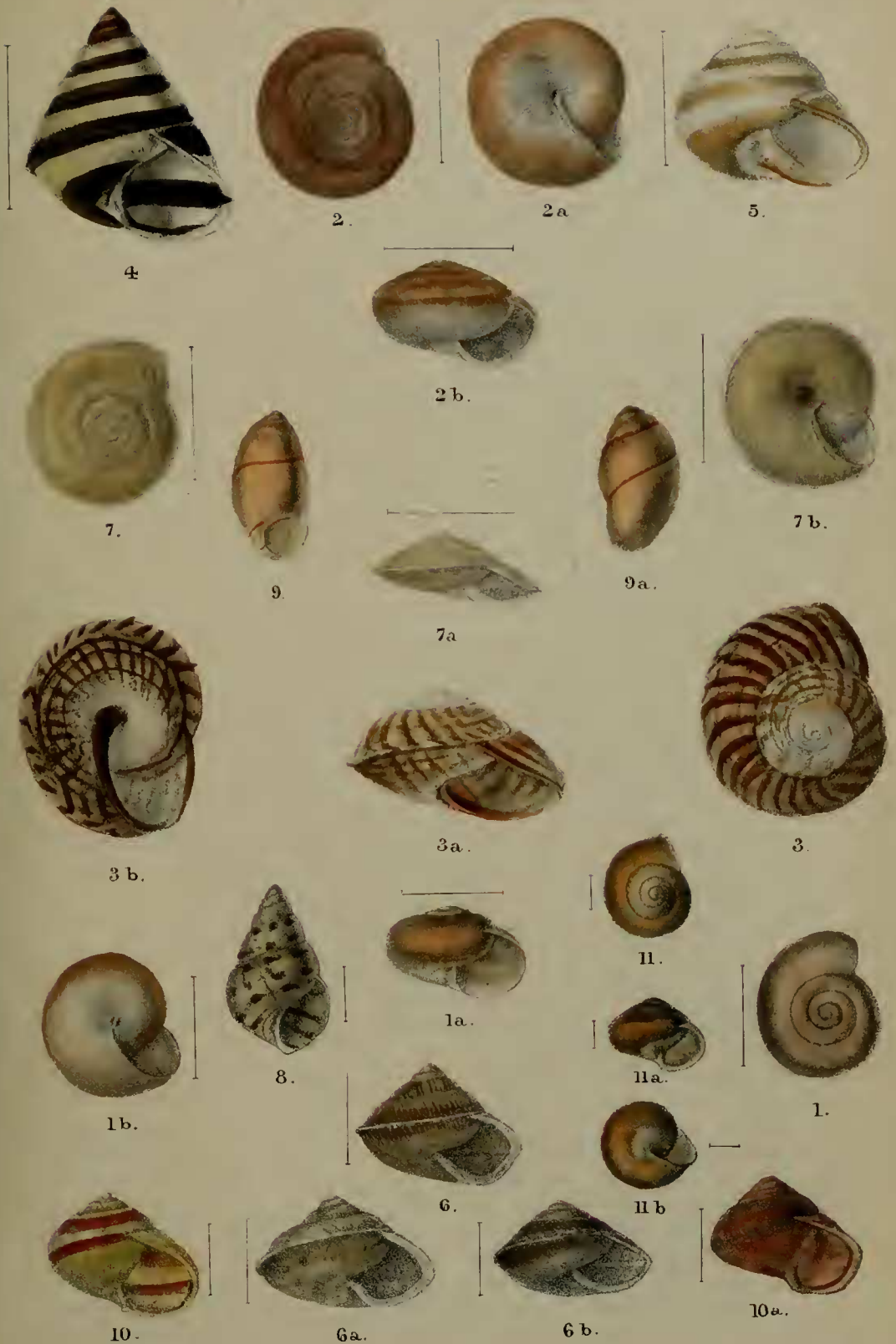
Of *Neritina* only six species have been noticed, namely:—1. *N. macgillivrayi*, Reeve; 2. *N. porcata*, Gould; 3. *N. dubia*, Chemnitz; 4. *N. christovalensis*, Reeve; 5. *N. udumbrata*, Reeve; and perhaps 6. *N. cuprina*, Récluz. Of these numbers 1, 2, 3, and 5 were also collected by Mr. Guppy, in addition to which he obtained eleven other species. These are:—7. *N. cornea*, Linné; 8. *N. subsulcata*, Sowerby; 9. *N. pulligera*, Linné; 10. *N. petiti*, Récluz; 11. *N. olivacea*, Le Guillou; 12. *N. asperulata*, Récluz; 13. *N. variegata*, Lesson; 14. *N. turtoni*, Récluz; 15. *N. brevispina*, Lamarck; 16. *N. squarrosa*, Récluz; 17. *N. sanguisuga*, Reeve.

Some of these species range not only through most of the islands of the Solomon group, but have a considerably wider distribution. This wide dispersal of these freshwater Nerites may be due to the fact that their egg-capsules are calcareous and apparently able to resist salt-water. These, if attached to floating timber, might be carried considerable distances. It is less likely that the perfect live shells would be transported in this way, for according to some experiments made by Mr. Guppy, it appears that they cannot stand submersion in salt-water for any length of time. One individual (*N. cornea*) survived after a submersion of 12 hours, but when a dozen were placed in the water and kept there five days not one survived, although the water was changed from time to time.

1. HELICARION PLANOSPIRA, Pfeiffer.

Hab. Ugi and Santa Anna (*Guppy*).

This, the only species of *Helicarion* as yet recorded from the

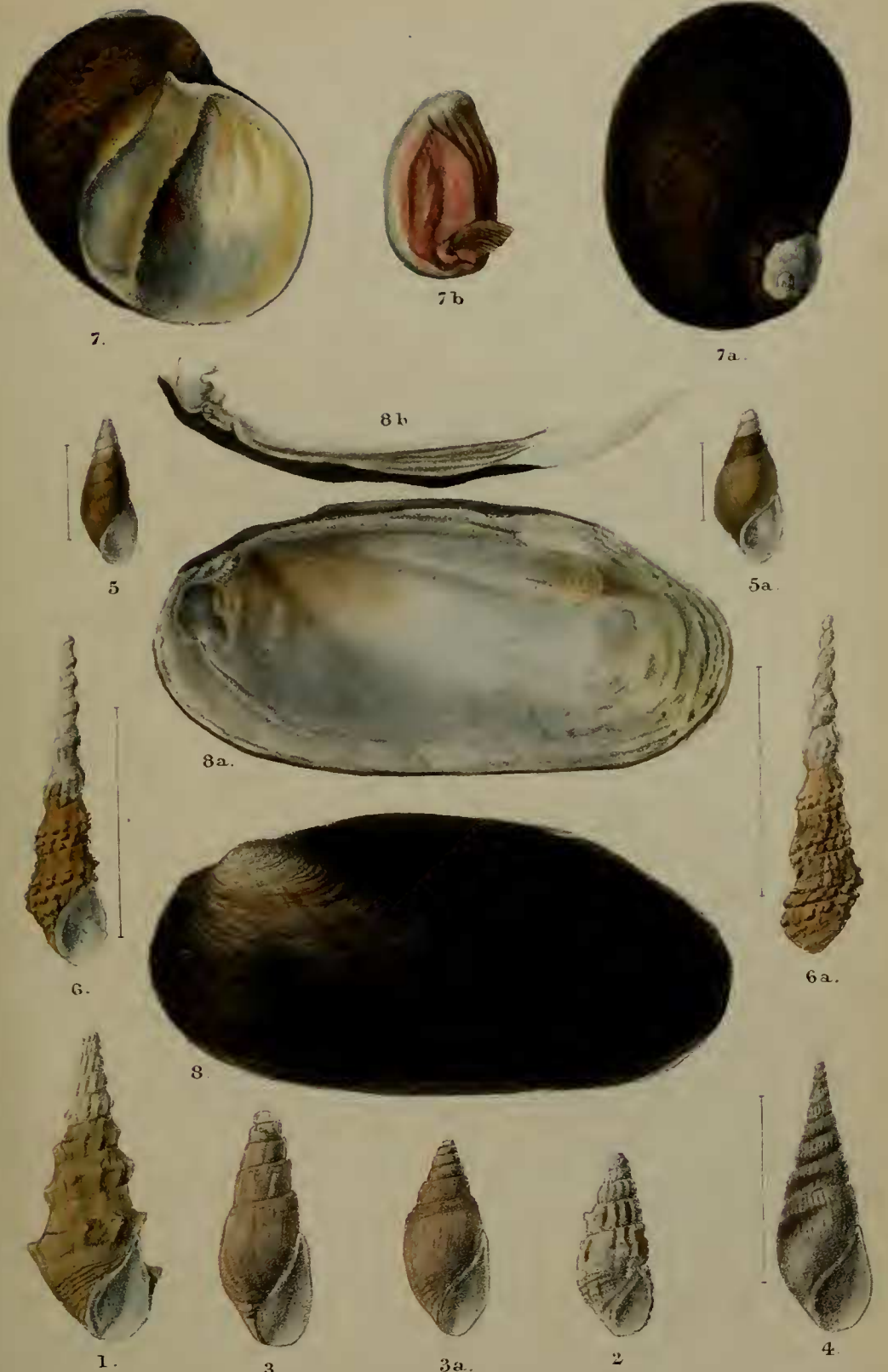


R Mintern del et lith

Mintern Bros. imp.

LAND SHELLS FROM THE SOLOMON ISLANDS.





R. Minterm del et lith.

Minterm Bros. imp

FRESHWATER SHELLS FROM THE SOLOMON ISLANDS



Solomon Islands, has also been collected further north than Ugi, on San Christoval and Guadalcanar, by Macgillivray.

2. *HELIX (NANINA) NITIDISSIMA*. (Plate XXXVI. figs. 1, 1 *b*.)

Shell thin, transparent, very glossy, depressed, narrowly perforate, pale brownish horn-colour above, whitish towards the umbilicus, sculptured with very faint lines of growth. Whorls 4-5, slightly convex, impressed and marginate above at the suture; last whorl large, rounded at the periphery. Aperture obliquely lunate; peristome simple, thin, slightly thickened and reflexed partly over the perforation. Spire low, but very little raised above the last whorl, obtuse at the apex. Greatest diameter 14 millim., smallest 12; height 9.

Hab. Treasury Island, Bougainville Straits.

Nanina casca of Gould, from the Fiji Islands, is very like this species, but has more slowly increasing whorls: the last is proportionally smaller than in *H. (Nanina) nitidissima*.

Two specimens from Guadalcanar Island, collected by J. Macgillivray during the voyage of H.M.S. 'Herald,' and presented by him to the British Museum, may be considered as referable to a variety of this species, having the spire somewhat more elevated and the body-whorl a little more globose.

3. *HELIX (NANINA) SOLIDIUSCULA*. (Plate XXXVI. figs. 2, 2 *b*.)

Shell very narrowly perforate, depressed, somewhat solid, dark chestnut-brown and a little glossy above, more shining and paler beneath, becoming almost white at the umbilical region; whorls $6\frac{1}{2}$, convex, separated by a deepish suture, and, with the exception of two or three at the apex which are smooth, sculptured with strong, close-set, arcuate, and oblique striæ on the upper surface, crossed with a few more or less distinct spiral lines. Body-whorl rounded at the periphery, or sometimes with the faintest indication of an angle, convex, and only exhibiting fine lines of growth below. Aperture obliquely semi-lunate; peristome simple, but, owing to the solidity of the shell, seeming slightly thickened, especially on the very oblique columellar margin, which is shortly reflexed above over the perforation. Spire depressed-conoid, having the least convex outlines and an obtuse apex. Greatest diameter 18 millim., smallest $16\frac{1}{2}$, height 12; aperture 8 long, $4\frac{1}{2}$ wide.

Hab. Santa Anna Islands, "living generally on the trunks of cocoa-nut palms" (*Guppy*).

This species is well distinguished by its comparative solidity and strong sculpture on the upper surface.

4. *HELIX (CORASIA) TRICOLOR*, Pfeiffer. (Plate XXXVI. figs. 3, 3 *b*.)

This species was described originally from specimens collected at the island of San Christoval; it was obtained at Ugi or Gulf

Island by Brechley during the cruise of the 'Curacoa,' and Mr. Guppy found it at San Christoval, Ugi, and Santa Anna, all of these localities being at the southern end of the group. As the species has not been recorded from any of the other islands, it is possible its distribution may be confined to San Christoval and the small islands in the immediate vicinity. The variety β of Pfeiffer (Monog. Helic. vol. iv. p. 193) was obtained by Mr. Guppy at Santa Anna; one of the specimens, which evidently is adult, being more conical above and only 25 millim. across at its greatest diameter, whilst the normal form from San Christoval attains at times an extreme width of 35 millim. Specimens of the typical form, of the same large size, but lacking the red markings on the sutural band and at the keeled periphery, were collected at San Christoval by J. Macgillivray, Esq., during the voyage of H.M.S. 'Herald.'

A specimen obtained on the north coast of the same island by Mr. Guppy is worthy of special mention, and may be termed var. *picta*, on account of the undulating reddish-brown stripes which ornament both the upper and lower surfaces.

A similar example was also collected by Dr. A. Corrie and presented to the Museum. The markings on these two shells are very striking and distinctly visible within the aperture.

5. HELIX (CORASIA) ANADYOMENE, A. Adams & Angas.

Hab. Ugi I.

The single specimen obtained by Mr. Guppy is a rather more adult shell than the type, which was presented to the British Museum by Mr. Angas. It has somewhat more strongly marked lines of growth, is of a rather thicker substance, and has the peristome more thickened and more broadly reflexed. Guadalcanar Island, where this species was first discovered, is a little to the west or north-west of Ugi or Gulf Island.

6. HELIX (GEOTROCHUS) ACMELLA, Pfeiffer.

Hab. Faro Island and Florida Island.

Of this species only one variety has previously been mentioned, which is of an almost uniform greenish-yellow tint. A specimen "from the coral-limestone region" of Florida Island has the body-whorl of a salmon-tint and the three topmost volutions bright red. The peristome is white, as in the normal form.

It seems to me doubtful whether this species is really specifically distinct from *H. meta*, Pfr.; for even in the small series in the Museum the gradual transition from one form to another can almost be demonstrated. The greater convexity of the whorls, the broader body-whorl, and consequently the sharper spire, mainly distinguish this species. It was originally said to have come from the Admiralty Islands, the inaccuracy of which locality has since been pointed out by Brazier (Journ. de Conch. 1880, p. 302), who obtained specimens from Bougainville and Ysabel Islands, showing that this species has a rather extended range in this group of islands.

7. *HELIX* (*GEOTROCHUS*) *GAMELIA*, Angas.

Hab. Shortland and Treasury Islands in the straits between Bougainville and Choiseul Islands (*Guppy*); Stephen and Ysabel Islands (*Angas*).

8. *HELIX* (*GEOTROCHUS*) *HARGREAVESI*, Angas.

Hab. Faro Island, also between Bougainville and Choiseul Islands. Found in the higher parts of the island up to the summit, 1900 feet above the sea.

This and the preceding species are very closely related, the colour and disposition of the bands being almost the same. *H. hargreavesi* may, however, be recognized by its more elevated conical form, the much broader band on the base of the body-whorl, the blackish-brown peristome, the dark-coloured callosity overspreading the umbilical region, and the peculiar oblique columellar margin, which is thickened and almost subtruncate anteriorly where it falls within the outer edge of the lip, which is fused above with the spreading umbilical callus. In *H. gamelia* the last whorl does not descend in front, whereas in the present species it takes a rather sudden and considerable turn downwards.

9. *HELIX* (*GEOTROCHUS*) *MENDANA*, Angas.

Hab. Shortland Island, Bougainville Straits.

In the Proc. Zool. Soc. 1867, p. 889, Angas gave Ysabel Island as the locality of this species, but he subsequently presented two specimens to the British Museum from Bougainville Island.

10. *HELIX* (*GEOTROCHUS*) *MOTACILLA*, Pfeiffer.

Hab. Simbo Island, south of Choiseul Island.

Eddystone Island, where this species was originally discovered, also belongs to the Solomon, and not to the Admiralty group as stated by Pfeiffer. The specimens brought home by Mr. Guppy belong to the variety ornamented with four spiral bands upon the body-whorl, two above and two below the middle, of which the two nearest the somewhat carinate periphery appear to be invariably of a darker tint than the rest.

11. *HELIX* (*GEOTROCHUS*) *GUPPYI*. (Plate XXXVI. fig. 4.)

Shell elevately conical, thin, pale yellow, ornamented with conspicuous nearly black or black-brown spiral bands, one above and one below the sutures of the upper whorls, and three upon the last, one sutural, the second peripheral, and the third basal. Volutions 6, rather slowly enlarging, a little convex, sculptured with fine oblique striæ of growth, not glossy. Three first whorls livid purplish, the last rather sharply angled at the middle, not descending in front, having the basal band broad around the almost concealed perforation, and obsolete within the aperture. The latter is oblique, somewhat narrowed and pouting in front, banded within with three almost black and two white bands, the central one of the former being squarely truncate at the end, only the lower corner of it

touching the margin of the lip, which is pale, oblique, receding, a little expanded and reflexed in front and at the columellar margin, the upper end of which is spread over and nearly conceals the small umbilicus. Height $22\frac{1}{2}$ millim., greatest diameter 19, smallest 16.

Hab. Faro Island, Bougainville Straits; "in the higher parts of the island up to the summit, 1900 feet above the sea."

This species is remarkable for the striking contrast of its colour-bands and the angular character of the last whorl.

12. *HELIX* (*GEOTROCHUS*) *DAMPIERI*, Angas, var. (Plate XXXVI. fig. 5.)

Shell imperforate, subglobose, conoid, light brown or fawn-colour, here and there minutely dotted with dark-grey specks, with a broad white band around the middle of the penultimate whorl and two upon the last, one above and the other below the middle, also a narrow white line revolving up the spire beneath the suture, and a dark brown zone surrounding the pale or yellowish umbilical region. Whorls 5, a little convex above, somewhat glossy, obliquely and very finely striated by the lines of growth, the last more or less concentrically striated beneath, shortly descending at the aperture, which is white within. Lip a little thickened, edged with reddish brown, only slightly expanded on the right side, more dilated below, produced into a thin transparent callosity over the umbilical region, united above to the upper extremity of the peristome. Columellar margin oblique, white or partly tinged with reddish brown, thickened and terminating below within the edge of the lip. Height 19 millim., greatest diam. 22, smallest 19.

Hab. Choiseul Bay, Bougainville Straits (*Guppy*); Louisiade Archipelago (*Angas*).

The specimens from the Solomon Islands are smaller than the type with which, through the kindness of Mr. G. F. Angas, I have compared them. They also have the peristome brown, and the basal band is darker.

13. *HELIX* (*GEOTROCHUS*) *EROS*, Angas.

Hab. Shortland Island, Bougainville Straits (*Guppy*).

This species also occurs at Ysabel and Stephen Islands according to Brazier and Angas, being very abundant on trees at Ysabel. It varies considerably in colour, and has not always a rose-tinted peristome, whilst the apex of the spire is in some specimens purple-brown instead of rose. The single shell obtained by Mr. Guppy is dark purple-brown, with a white zone at the suture, which is sparsely marked with dark dots. It has a white band at the periphery, and a broad zone of the same colour around the umbilicus; the lip is pink.

14. *HELIX* (*GEOTROCHUS*) *CLERYI*, Récluz. (Plate XXXVI. figs. 6, 6 b.)

This species, with which may be united *H. helicinoides* of Hombron and Jacquinot, is subject to considerable variation in size, colour,

and form, apparently resulting from difference of habitat. The typical form occurs in San Christoval and Ugi, and also in Guadalcanar and New Georgia, but in a somewhat dwarfed condition. An entirely white variety with a pellucid zone on the upper surface, occupying the position of the brown band in the type, was collected by Macgillivray on San Christoval. Mr. Guppy obtained several forms of this species at Choiseul Bay, Shortland, Treasury, Simbo, Rua Sura, and Santa Anna Islands.

The specimens from the last locality (var. *meridionalis*, fig. 6 *b*) are smaller than the type, pale brown above, with a white thread-like line at the suture, and the acutely keeled periphery, paler beneath, especially towards the centre, and have the aperture particularly acuminate at the termination of the keel. These specimens, which were found by Mr. Guppy living "on young cocoa-nut palms growing on low ground bordering the sea," recall to mind *H. eva* from the New Hebrides, which, however, has a narrower body-whorl, usually a coloured lip, and is generally of a more solid texture.

The specimens from Simbo (var. *simboana*, fig. 6 *a*) are uniformly pale horn-colour, rather sharply carinate at the middle, and have the peristome white, considerably thickened and almost notched at the upper end of the columella, and the body-whorl is more contracted than in the typical form. The examples from Choiseul Bay, Shortland and Treasury Islands (var. *septentrionalis*, fig. 6) are all alike, of smaller dimensions than the normal form, thin, pale brownish horn-colour, with rather more convex whorls than usual, the carina at the periphery being acute and thread-like as in the variety *simboana*.

Whether these several varieties should take specific rank is questionable, for, although there is considerable difference between the extreme forms, even in the series of nearly one hundred specimens under examination, the gradual transition from one form to another is observable.

15. HELIX (VIDENA) MERZIANA, Pfeiffer.

Hab. Ugi Island.

Neither of the two specimens from this locality is typical, nor are they both alike. One is about the usual size, but less sharply carinate, of a paler colour above and variegated with less of the opaque streaks. The second specimen is more abnormal, especially in form, and rather like *P. meleagris*, Pir., except that it is keeled. The two species already mentioned, also *H. deiopieia*, Angas, and *H. sebacea*, Pir. (= *H. cerealis*, Cox, afterwards changed to *H. thorpeiana* by Brazier), are all very closely related, *H. sebacea* (stated by Pfeiffer to be from the Admiralty Islands) evidently being but a pale variety of *H. meleagris*.

The typical form inhabits San Christoval and New Georgia. *H. meleagris* and *H. deiopieia* are found at Guadalcanar, and the special locality of *H. sebacea* is unknown, "the Admiralty Islands" given by Pfeiffer probably being one of the many false habitats emanating from Cuming's collection. Having the actual types of

both *H. sebacea* and *H. cerealis* under examination, I have no hesitation in pronouncing them identical.

16. *HELIX* (*VIDENA*) *SANCTÆ ANNE*. (Plate XXXVI. figs. 7, 7 b.)

Shell depressed-conoid, deeply umbilicated, very acutely keeled at the periphery, light brown, sometimes with a few radiating pale streaks on the upper surface, sculptured with oblique lines of growth. Whorls 5, rather slowly increasing, slightly convex, depressed and margined above the suture, last not descending, compressed above and below the keel, a little convex towards the umbilicus, which is moderately large. Aperture transverse, flesh-tinted within. Peristome simple, a little thickened along the basal margin, with the extremities united by a thin callus. Height 7 millim.; greatest diameter 17, smallest 15.

Hab. Santa Anna. "Living generally on the trunks of coconut palms" (*Guppy*).

This species is very like *H. latimarginata*, Smith, from the Fiji Islands and Contrariétés Island, Solomon group; but is a trifle larger, more widely umbilicated, has a less convex spire, and a broader body-whorl. The pale streaks on the upper surface are like those in *H. merziana*, Pfr., but they do not occur in all examples.

17. *HELIX* (*RHYTIDA*) *VILLANDREI*, Gassies.

Hab. Ugi Island (*Guppy*); San Christoval (*Macgillivray*, *Angas*, and *Brazier*).

18. *HELIX* (*CAMÆNA*) *HOMBRONI*, Pfeiffer.

Hab. Shortland and Faro Islands (*Guppy*); Ysabel Island (*Brenchley in Brit. Mus.*); Solomon Islands (*Hombroun and Jacquinet*).

"Admiralty Islands," the locality originally assigned to this species, is evidently incorrect.

19. *HELIX* (*CHLORITIS*) *EUSTOMA*, Pfeiffer.

Hab. Ugi and Faro Islands (*Guppy*); New Georgia (*Macgillivray*).

With this species should be united *H. erinaceus* of Pfeiffer, for having carefully compared the types of both forms, I do not find any difference, and therefore conclude that *H. eustoma* is another instance of a species wrongly assigned to the Admiralty Islands.

20. *BULIMUS* (*PLACOSTYLUS*) *CLERYI*, Petit.

Hab. "The Koofch district on the north coast of San Christoval" (*Guppy*).

This remarkable species varies considerably in form, some specimens being much constricted round the middle of the body-whorl and much more slender than others, which show no trace of irregularity of outline. The type figured by Petit has a length of 100

millim., and is 35 wide, the aperture being 60 in length. As an instance of extreme variation, I give the dimensions of one of the specimens collected by Mr. Guppy: length 104, breadth 29!; aperture only 50 long.

The sculpture of this species does not appear to have been hitherto properly described. In well-preserved specimens the first four whorls are sculptured very much like a fine thimble. A cessation in growth or some important change then takes place, which is marked on the shell by an oblique indentation, from which point the sculpture alters, consisting of coarsish lines of growth and irregular spiral striæ. The peristome varies in colour, being either white or almost golden, but generally of a reddish-flesh tint. The columella-twist is also variable, in some specimens being much thicker and more contorted than in others.

21. *BULIMUS (PLACOSTYLUS) FOUNAKI*, Hombron and Jacquinot.

Hab. Faro Island, Bougainville Straits.

This species has not been recorded from so northern a locality, and in fact has only been previously obtained at Ysabel Island. The name of this species has (perhaps rightly) been changed by M. Crosse to *B. hombroni*.

22. *BULIMUS (PLACOSTYLUS) MILTOCHEILUS*, Reeve.

Hab. Ugi or Gulf Island, the south-east part of San Christoval and Santa Anna.

The last island is a new locality for this species, the distribution of which has been given by Brazier in the 'Proceedings of the Zoological Society,' 1869, p. 162. He says that it varies much in size and colour. An interesting variety with a white lip was obtained by Mr. Guppy both at San Christoval and Santa Anna. Like *B. cleryi* this species has the upper whorls finely punctate, and suddenly alters the character of the sculpture after two and a half volutions have been formed. In adult shells this peculiar pitting on the apical whorls is generally more or less obliterated.

23. *PARTULA*, sp.

A small species of this genus was collected by Mr. Guppy in Treasury Island and at Choiseul Bay, which appears to be very like *P. cinerea*, Albers. The same species was also obtained at Gulf Island by Mr. Brenchley, and at Guadalcanar by J. Macgillivray, both of whom presented specimens to the British Museum. Albers describes the whorls of his species as "planiusculi," whereas in all the examples under examination they are rather convex, but with this slight exception they correspond very closely with his diagnosis.

24. *SUCCINEA SIMPLEX*, Pfeiffer, var.

Hab. "From marshy districts where Taro is cultivated, Treasury and Shortland Islands" (*Guppy*).

These specimens are of a darker tint than those described by

Pfeiffer, have the spire a trifle shorter, and the body-whorl the least more ventricose. In all the apex is reddish, and the lines of growth rather coarse.

25. *CYCLOSTOMA* (*ADELOSTOMA*) *TRISTE*, Tapparone Canefri, var. ?

Hab. Faro and Shortland Islands and Choiseul Bay in Bougainville Straits and Santa Anna Island (*Guppy*); Guadalcanar (*Macgillivray*, in Brit. Mus.).

Dr. Tapparone Canefri has kindly compared specimens from these islands with his *C. triste*, and is of opinion that they may be considered a variety of it; and observes that the New-Guinean form is a little smaller, its spire a little more slender, its surface more glossy, the colour redder, and the apex of the spire darker.

The shells under examination are clothed with a very thin epidermis when in a fresh condition, exhibiting numerous very fine spiral thread-like lines, which entirely disappear in worn shells and can easily be rubbed off with a brush. For several species having a similar epidermis and an incomplete peristome, Dr. Tapparone Canefri has proposed the subgenus *Adelostoma*. The little shell *Cyclostoma infans* from Wild Island, Admiralty group, described from the 'Challenger' Collection (Proc. Zool. Soc. 1884, p. 226, pl. xxiii. fig. 8) belongs to the same section.

26. *LEPTOPOMA JACQUINOTI*, Pfeiffer.

Hab. Rua Sura Island, off the north coast of Guadalcanar.

This species does not appear to have been frequently met with by collectors, and is chiefly known (as *Cyclostoma pellucidu*) by Rousseau's description in the 'Voyage au Pôle Sud,' and the diagnosis by Pfeiffer taken from the figure in the Atlas to that work. The three specimens collected by Mr. Guppy are uniformly semipellucid white, with the exception of the apex, which is pale reddish. The whorls are five in number, considerably convex, rapidly enlarge, and are sculptured throughout with very fine concentric striæ besides the more prominent spiral liræ, which are most distinct upon the body-whorl above the prominent carina at the periphery. The peristome is moderately and equally expanded all round except at the short interruption at the body-whorl and just under the umbilicus, where it is conspicuously emarginate. The operculum is thin, pale dirty yellowish, consists of about eight volutions which are separated by a raised revolving sutural line and sculptured with rather coarse cross-lines of growth.

The largest of the three specimens from Rua Sura is 15 millims. high, 17 at its greatest diameter and 12½ at its smallest.

L. immaculatum, Chemnitz, is very like this species in some respects, but differs a little in form, having a taller and more conical spire, less rounded whorls, a more shallow suture, &c.

27. *LEPTOPOMA VITREUM*, Lesson.

Hab. Santa Anna, Simbo, and Shortland Islands.

This species, originally described from New Guinea and subsequently met with at several other localities, has not, I believe, been previously recorded from the Solomon Islands. The only three specimens obtained by Mr. Guppy are entirely white, and two of them have an indication of an angle or keel at the periphery, the other, from Santa Anna, being regularly rounded at the middle.

28. *OMPHALOTROPIS NEBULOSA*, Pease. (Plate XXXVI. fig. 8.)

Hab. Ugi Island, "found living on trees which clothe a low tract of land skirting the beach" (*Guppy*); San Christoval and Guadalcanar Islands (*Macgillivray*, in Brit. Mus.); Solomon Islands (*Pease*).

The shells which I associate with this species were considered by Pfeiffer the *O. bulimoides* of Hombron and Jacquinot. That species, however, was collected at Hogoleu, one of the Caroline Islands, situated about a thousand miles to the north-west of San Christoval, and does not appear to have a carinated umbilicus judging from the figure in the 'Voyage au Pôle Sud' and from Rousseau's description in the text. It also has much more convex whorls and a longer aperture.

The colouring of this species varies considerably. The majority of specimens which I have examined are dirty whitish or yellowish, varied with more or less interrupted spiral brown bands, of which there are four on the body-whorl, two above and two below the middle. Other examples are of a nearly uniform brown colour with a pale line at the periphery, and, again, others are longitudinally streaked. The operculum is thin, horny, concave externally, and consists of three to three and a half rapidly enlarging whorls, the nucleus being well towards the centre. *O. fragilis*, Pease, is very like this species, but has a slight keel or angle at the periphery, stronger spiral striæ, and a less effuse base to the aperture.

29. *PUPINA SOLOMONENSIS*. (Plate XXXVI. figs. 9, 9 a.)

Shell small and very like *P. difficilis*, Semper, and *P. keraudreni*, Vignard. It is of a reddish tint, especially the body-whorl; consists of $5\frac{1}{2}$ whorls, which are the least convex and exhibit a pellucid line, frequently brown, immediately beneath the suture. Last whorl very obliquely descending behind, narrowed below, and flattened somewhat above the aperture. Columella thickened with callus, white, parted off from the whorl above by an oblique circumscribing red line, truncated rather low down. Outer lip slightly thickened and effuse, and a little paler than the rest of the whorl, produced somewhat at its junction with the body-whorl, which in consequence has the appearance of rising suddenly after an oblique descent. Length 7 millims., diam. $3\frac{2}{3}$, aperture 2 long and wide.

Hab. Shortland Island, Bougainville Straits, in the decayed trunks of fallen trees (*Guppy*); Treasury Island (presented to the British Museum by *J. Brazier, Esq.*).

This is a larger species than *P. difficilis*, Semper, or *P. keraudreni*, Vignard, which appear to be very much alike. The slit in the

columella is a trifle lower down, the columella itself is pale and marked off from the rest of the whorl by a red curved line, and the aperture is less produced or pouting along the lower margin.

30. *HARGRAVESIA POLITA*, H. Adams, var.

Hab. Faro Island, Bougainville Straits; "in the higher parts of the island up to the summit, 1900 feet above the sea" (*Guppy*).

It is not stated by Adams (*Proc. Zool. Soc. Lond.* 1870, p. 795) from which island of the Solomon group the types were obtained. In all probability they were not from Faro, as the specimen from this locality varies somewhat in form, having a more conical spire, less convex whorls, and the aperture less produced laterally. Should these differences prove constant in a large series of specimens, I should be inclined to consider this form specifically distinct. *Hyalopsis tumida*, Pease (*Amer. Journ. Conch.* vii. p. 27), is the same as the present species.

31. *HELICINA MOQUINIANA*, Récluz.

Hab. "The island of Ugi, living in a region of coral-limestone at an elevation varying between 300 and 400 feet above the sea" (*Guppy*). San Christoval and Guadalcanar Islands (*Macgillivray*, in *Brit. Mus.*).

This species appears to vary in size, colour, the coarseness of the spiral striæ, in the acuteness of the central keel, and in the greater or less development of the dentiform projection at the base of the columella. I have no hesitation in pronouncing *H. spinifera* to be a very slight variation, and indeed *H. egregia* might almost be regarded in the same light.

32. *HELICINA EGREGIA*, Pfeiffer. (Plate XXXVI. figs. 10, 10 a.)

Hab. "From the coral-limestone region of the east island of the Florida group, on leaves" (*Guppy*).

The unique type of this species was collected by Macgillivray on the island of Guadalcanar, which is situated just to the south of Florida Island. The operculum is thin, and coloured precisely like that of *H. moquiniana*, Récluz, and its variety *H. spinifera*, Pfeiffer, all three being of a dark sanguineous red with the exception of the columellar margin, which is whitish. This species is not keeled at the middle like the two above-named forms, and is more finely striated, and consequently has a smoother surface.

The three specimens collected by Mr. Guppy are all differently coloured. One is exactly like the type (see fig. 272 in Sowerby's *Monograph, Thesaur. Conch.* vol. iii., and *Conch. Icon.* vol. xix. fig. 159); another lacks the broad zone on the upper surface; and the third is uniformly light purplish-red, the peristome and aperture being of a more decided red tint.

33. *HELICINA MODESTA*, Pfeiffer.

Hab. Choiseul Bay, Shortland Island, and an islet in Treasury Harbour, Bougainville Straits (*Guppy*); Guadalcanar Island (*Macgillivray*, in *British Museum*).

The specimens described by Pfeiffer were said to have come from Tanna, one of the New Hebrides islands ; but this certainly requires confirmation, as so many of the localities in Cuming's collection are erroneous. The figures in Sowerby's Monographs are all enlarged, those in the 'Thesaurus' being fairly accurate as regards form, but those in the 'Conchologia Iconica' are altogether unlike the species. The operculum of this little shell is white, concave in the middle, and is broadly thickened along the outer margin.

34. *HELICINA SOLOMONENSIS*. (Plate XXXVI. figs. 11, 11 *b*.)

Shell small, globose-conical, reddish or yellowish, pale at the apex. Whorls 4-4½, the least convex above, sculptured with lines of growth and fine spiral striæ both on the upper and lower surfaces, very faintly margined above at the suture; last whorl rounded at the periphery, obsoletely angled near the junction of the outer lip and the least descending in front, so that the faint angulation is visible for a short distance above the sutural line. Aperture somewhat semicircular and oblique, small; peristome slightly expanded; umbilical callosity yellowish or pellucid whitish, defined towards the base of the columellar margin. Greatest width 4⅔ millim., smallest 4; height 3½.

Hab. Faro, Shortland, and Treasury Islands.

The specimens from the last of the above islands were obtained "at a height of 900 feet above the sea."

This little species is of about the same size and form as *H. multicolor*, Gould, but is distinguished by the spiral sculpture. The operculum is greyish, becoming rather darker at the middle.

35. *PYTHIA SCARABÆUS*, Linné.

Hab. Santa Anna Island, "living on a sandy swampy soil raised a few feet above the sea" (*Guppy*).

Of the five adult specimens from the above locality, which are of medium size (about 30 millims. long) and normally mottled and blotched, three are umbilicated and one imperforate. The variation in this respect has already been referred to in my account of the Land and Freshwater Mollusca of the 'Challenger' Expedition (Proc. Zool. Soc. 1884, pp. 261 and 268). *P. insularis* of Hombron and Jacquinot I regard as the same as this species.

Three specimens of the variety named *P. albovaricosa* by Pfeiffer were also collected by Mr. Guppy "on the low tract skirting the coast on the south-east side of San Christoval." Two of these specimens are coloured precisely like the types, which were said to have come from the island of Celebes, but the third is very remarkable, being totally white.

Three young specimens of the normal form, from Santa Anna Island, are clothed with a very thin epidermis which is produced into numerous parallel thin hair-like threads in the direction of the line of growth. At this early stage the shells are imperforate, and the columella has in consequence a somewhat different appearance.

36. *MELAMPUS FASCIATUS*, Deshayes.

Hab. Rua Sura Island, off the north coast of Guadalcanar, found in crevices of a log on the shore (*Guppy*); Ysabel Island (*Brenchley* in Brit. Mus.).

This species apparently differs as much in size as colour, and is very widely distributed, there being in the British Museum specimens from the Keeling Islands, Louisiade Archipelago, New Hebrides, and Fiji. The largest specimens are generally whitish with transverse brownish bands, and the smallest are frequently of an almost uniform black-brown, or light olive-brown or dirty yellow, with only the faintest indications of transverse zones.

37. *MELANIA AMARULA*, Linné.

Hab. From a stream in Ugi Island.

The two specimens from this locality differ in form and the number of spines upon the angle of the whorls. One has a much longer body-whorl, and has seventeen spines, the other only eleven. The columella is orange, and the epidermis towards the lip villose, as in the variety called *M. cybele*, Gould.

38. *MELANIA SCABRA*, Müller.

Hab. Ugi Island.

I see no sufficient reasons for separating the few specimens obtained by Mr. Guppy from this variable and widely distributed species, with which several forms held distinct by Brot in his Monograph should, I think, be united. I have compared them with Indian examples, with which they agree very closely.

39. *MELANIA SALAMONIS*, Brot.

Hab. Ugi Island.

The single specimen from this locality differs in colour from the type figured by Brot, being uniformly olive, except the upper spirally striated whorls, which, being more or less destitute of the epidermis, are paler, and exhibit a series of small red spots or short flames below the suture.

40. *MELANIA FULGURANS*, Hinds.

Hab. Ugi Island.

This species has not, I think, been recorded from the Solomon Islands, although it has probably been known for some time to inhabit that group, for Mr. Brazier of Sydney presented, in 1879, four specimens from that locality to the British Museum. These and several obtained by Mr. Guppy show that the species is rather variable in painting. None have the zigzag lines of the typical form, but are chiefly ornamented with spiral series of reddish dots or short lines, sometimes falling into longitudinal rows, and the whorls below the suture are often blotched with a darker colour. Mr. Guppy's largest specimen (7 whorls remaining) is 40 millim. long.

41. MELANIA FASTIGIELLA, Reeve. (Plate XXXVII. fig. 1.)

Hab. "Imbedded in a dark calcareous loam exposed in the bank of a large stream at Sulagina on the north coast of San Christoval."

The specimens found by Mr. Guppy are not quite so slender as the type figured by Reeve, but agree with it exactly in all other respects. An important feature not referred to by Reeve is the presence of fine transverse liræ upon the body-whorl below the spined keel. The fine costæ and spiral striæ on the uppermost volutions are very constant in all specimens; and therefore I think it most probable that Brot's shell (*Monogr. Melania*, in Couch.-Cab. pl. 38. f. 2a) does not belong to this species.

Mr. Guppy was unable to discover any living specimens; those which were obtained being, however, well preserved and even retaining a certain amount of the epidermis, which is of a "yellowish brown" colour as described by Reeve, and not of the sombre tint depicted in his figure.

42. MELANIA, sp. (Plate XXXVII. fig. 2.)

Hab. Found "imbedded in a dark calcareous loam exposed in the bank of a large stream at Sulagina on the north coast of San Christoval" (*Guppy*).

Only one dead specimen was obtained of this species. It is ovately fusiform, consists of about 8 or 9 whorls, is longitudinally plicate, the folds being produced into short spines just beneath a depression a little below the suture. The plicæ are crossed by about three spirally striated grooves, and the body-whorl is strongly transversely ridged and grooved below the middle; the furrows also, as in the upper whorl, being finely striated in the same direction. Length 26 millim., width $9\frac{1}{2}$.

43. MELANIA VERRUCOSA, Hinds.

Hab. The same as *Mel. fastigiella*.

The three shells obtained I am unable to separate from this species, which was described originally from specimens from New Ireland, a little to the north of the Solomon group. *M. damonis* of Brot appears to be very closely allied to this species, if not the same. As stated by the latter author, some specimens are more slender than others, as shown by the following measurements of two specimens with an equal number of whorls: length 20 millim., diameter $7\frac{1}{3}$; length 22 millim., diameter $6\frac{1}{2}$.

44. MELANIA SUBGRADATA. (Plate XXXVII. figs. 3, 3 a.)

Shell elongate, turreted, rather solid, covered with an (olive?) epidermis, and marked with fine longitudinal oblique red lines which extend from suture to suture. Whorls probably about 10, flat or even a little concave at the sides, shouldered above, usually with a spiral shallow groove and a few striæ near the shoulder, and marked with fine incremental striæ. Suture deep, slightly oblique. Last whorl long, finely transversely striated, most distinctly at the base.

Aperture elongate-pyriform, acute above, effuse at the base. Outer lip thin, sharp, arcuate, and prominent at the middle. Columellar margin rather thickly covered with callus, united above to the outer lip. Length of two specimens, consisting of five whorls, 30 and 25 millim.; diameter 11 and $10\frac{1}{2}$; aperture 14 and 12 long, 6 and 5 wide.

Hab. "Imbedded in a dark calcareous loam exposed in the banks of a large stream at Sulagina, north coast of San Christoval" (*Guppy*).

This species has a good deal the form of *M. queenslandica*, Smith, but has a more turreted spire, colour-markings, and more distinct spiral sculpture.

45. MELANIA UGIENSIS. (Plate XXXVII. fig. 4.)

Shell subulate, acuminate, beneath the epidermis (which is wanting in the specimens at hand), of a dirty pale livid or purplish tint. Whorls probably about 14 in number; the eleven remaining are a little convex, rather slowly enlarging, and sculptured with close-set obliquish fine riblets which are crossed by crowded spiral striæ. Last whorl large, with the riblets rather obsolete below the middle, and very close together, much more numerous than those upon the upper whorls. Aperture obliquely pear-shaped. Length 25 millim., diameter 8; aperture $8\frac{1}{2}$ long, $4\frac{1}{2}$ wide.

Hab. From a stream in Ugi.

Of this species only three dead specimens were obtained. They were all completely covered with a hard thickish coating of lime, so that no part of the sculpture was visible. This earthy covering was easily chipped off, and the ornamentation was revealed in most perfect condition. It is remarkable that the fine close riblets exist not only on the upper whorls but continue to the last, and are cut across by the spiral striæ, producing an almost granular aspect.

46. MELANIA SANCTÆ ANNÆ. (Plate XXXVII. figs. 5, 5 a.)

Shell small, acuminately pyramidal, somewhat eroded towards the apex, covered with a yellowish-olive epidermis, and sometimes marked with a few indistinct reddish irregular spots and lines near the middle of the body-whorl. Whorls 5-6 remaining, flattish at the sides, divided by a slightly oblique distinct suture, all with the exception of the last one or two more or less distinctly longitudinally finely plicate; the plicæ are more conspicuous in some specimens than in others, being at times entirely eroded. The other sculpture consists of fine lines of growth and a few rather distant spiral striæ, which cut across the incremental lines and produce a puckered appearance. Aperture elongate, pyriform, pale bluish within. Length of specimen consisting of six whorls 13 millim., diameter 5; aperture 5 long and $2\frac{1}{2}$ wide.

Hab. "From a stream in the interior of Santa Anna" (*Guppy*).

This is a small species, somewhat like *M. boninensis* of Lea in form, but differently sculptured.

47. MELANIA GUPPYI. (Plate XXXVII. figs. 6, 6 a.)

Shell slenderly acuminate, covered with an olive-brown epidermis. Whorls about 14, divided by a very oblique deepish suture, concave above the middle and somewhat convex below it, and then contracted; ornamented with a few spiral series of nodules (about five on the upper whorls) and rather indistinct, very oblique and flexuous, longitudinal ridges, upon which the nodules rest, also exhibiting very sloping and flexuous lines of growth; the most conspicuous rows of granules are near the middle of the whorls. Aperture pyriform. Outer lip thin, remarkably sinuated above towards the suture and arcuately prominent below. Columellar margin oblique, straightish, covered with a callus, curving into the broad basal sinus. Length 31 millim., diameter 7; aperture 9 long, 4 wide.

Hab. "From the stomach and intestines of a fish living in the freshwater lake of Wailava in the island of Santa Anna" (*Guppy*).

This is a very remarkable and distinct species, with a very drawn-out spire, peculiar granuled sculpture, and a deeply sinuated labrum. I have much pleasure in naming it after Mr. Guppy.

48. CERITHIDEA CORNEA, A. Adams (var.).

Hab. From Mangrove swamps, Choiseul Bay (*Guppy*); Andai, New Guinea (*Tapparone Canefri*); Borneo (*Adams*).

The specimens from the Solomon Islands vary slightly from the Bornean shells in Cuming's collection. The ribs are somewhat farther apart, the body-whorl is rather more distinctly carinate at the periphery, the aperture a trifle larger, the lip being more expanded and more produced to the left over the channel at the base of the columella. The whorls, too, are somewhat higher, for in specimens of the same length I find about a whorl more in the specimens from the Solomon Islands than in the original types.

49. NERITA MARMORATA, Hombron and Jacquinot.

Hab. Found "living just above high-water mark on the surface of the coral-limestone coast, San Christoval" (*Guppy*); Solomon Islands (*Hombron and Jacquinot*).

This species was described by Reeve (*Conchol. Iconica*, vol. ix. sp. 47) under the name *N. oleagina*, a year after the publication of the *Zoology of the 'Voyage au Pôle Sud'* by Rousseau. Reeve's figure gives a better idea of the mottled colouring than that in Hombron and Jacquinot's Atlas, pl. 16. f. 15-17. Their figure of the operculum does not appear to be quite correct in outline, judging from those obtained by Mr. Guppy, none of which have the emargination on the columellar side in front.

The apical whorls in all examples are of a lemon-yellow colour, and the columellar margin between the teeth is generally suffused with the same tint. *Nerita marmorata*, Reeve, which is found in the Gulf of Suez, may in future be called *M. crassilabrum*.

50. NERITINA CORNEA, Linné. (Plate XXXVII. figs. 7, 7 b.)

Hab. Found living on the stems of tree-ferns, betel-nut palms,

&c., in a marshy district in the interior of the Shortland Islands, Bougainville Straits; also from a stream in Choiseul Bay, and from the vicinity of Star Harbour on the south-east coast of San Christoval, found living on the trunks of trees 300 feet above the sea and about 150 feet above an adjacent stream.

The majority of the specimens from the above localities are very like Reeve's figure (Conch. Icon. f. 7*a*). One specimen, however, from a stream in Choiseul Bay, is worthy of special notice on account of its extraordinary size. It is as large as the shell figured by Gould (Wilkes's Explor. Exped. pl. xi. fig. 185) from Fiji, and, like it, has the edge of the columella furnished with about a dozen small denticles, agreeing in this respect with *N. subsulcata*. The portion of the specimen which equals an average-sized example is quite normally painted; but the rest or aftergrowth is mostly of a sombre olive-brown, with only very faint indications of the spiral mottled black zones. The operculum is quite similar to that of other specimens, but much thickened with flesh-red callus on the inner surface.

The distribution of this species has already been given by Von Martens in his monograph of the genus. In addition to the localities there enumerated, I may mention that in the British Museum there are specimens from Amboyna and the Admiralty Islands collected by the Challenger Expedition; and others from Guadalcanar, San Christoval, and Ysabel Islands of the Solomon group, presented by J. Macgillivray, Esq., and J. Brenchley, Esq.

51. *NERITINA SUBSULCATA*, Sowerby.

Hab. Streams in Treasury and Faro Islands, and at Choiseul Bay; also found living in numbers on the stems of tree-ferns, betel-nut palms &c., in a marshy district in the interior of the Shortland Islands; also from a stream in the vicinity of Star Harbour on the south-east coast of San Christoval; from a stream in the middle of the island of San Christoval 3-4 miles from the coast; from the sides of a freshwater stream, found at an elevation of 500 feet above the sea at Cape Keibeck, San Christoval, and finally from a stream in Ugi Islands.

Mr. Guppy informs me that this is the most widely distributed species of the genus which occurs in the Solomon group, and that when first picked off the rock it ejects a watery fluid possessing a powerful musky odour.

Some of the specimens are considerably eroded, and the erosion is always greatest in non-calcareous districts, where the carbonic-acid gas of the rain is not previously expended as a dissolving agent of limestone rocks.

Although this species very closely approaches *N. cornea*, it may, I think, be held distinct on account of its difference in coloration, the crenulated and straighter margin of the columella, and the slightly finer sculpture on the outer surface of the operculum, especially towards the outer curved margin.

52. *NERITINA DUBIA*, Chemnitz.

Hab. From a stream, Shortland Islands.

The single specimen from this locality is of a dark olive tint, marked with slender zigzag black lines very closely packed together except upon the last half of the body-whorl, which is destitute of the black lineation but is quite distinctly spirally ridged, the ridges being about as fine as in *N. subsulcata*.

53. *NERITINA ADUMBRATA*, Reeve.

Hab. A stream in Choiseul Bay, and found living on the sides of a deep ravine worn by a stream in a soft calcareous rock, Ugi Island.

N. cuvieriana of Reeve (Conch. Icon. sp. 87), which may not be the form described by Récluz under that name, is certainly the same as this species. The specimen figured in the 'Conchologia Iconica' (figs. 57 *a*, *b*), is not half the size of some of the shells collected by Mr. Guppy. The figures are not good, and do not convey the shape correctly. The aperture narrows in front, and the columella is less sharply sinuated in the middle, and finely crenulated along the edge. As in some other species, the colour is rather variable, some examples appearing at a distance uniformly dark olive, but on closer inspection, especially on the upper whorls, exhibit spotted markings. Others are distinctly mottled and spotted all over, whilst others again are transversely banded. The red stain on the collumella is present in most specimens, but is only feebly indicated in some of the smallest. The operculum is white or of a flesh tint on the outer surface, and generally has a livid stain at the nucleus. It is rather smooth, exhibiting fine lines of growth and a few feeble longitudinal striæ. The inner surface is of a darker flesh tint, and has a slightly elevated pale obsolete ridge curving from the nuclear end to the middle of the columellar or straight side. The outer curved margin is also a little thickened within. The erect process is rather slender. The largest specimen has an extreme length of 34 millimetres.

54. *NERITINA PULLIGERA*, Linné.

Hab. Choiseul Bay and Ugi Island (*Guppy*); Guadalcanar Island (*Macgillivray*); and San Christoval (*Brenchley*).

Of the two specimens from Ugi one is peculiar in having only a slight trace of the orange-red colour of the aperture. In addition to the localities cited by Martens in his monograph of this genus (Conch.-Cab. ed. 2, p. 51), I might mention Queensland, Australia, on the authority of Tenison-Woods, and of a specimen in the British Museum presented by Mr. Wickham.

55. *NERITINA PETITI*, Récluz.

Hab. Treasury and Faro Islands.

This species also occurs at the Fiji Islands, where it was collected by Macgillivray. Its further distribution has been given by Martens in the Conchylien-Cabinet. His surmise that *N. californica* of